

This Listing of Claims will replace all prior versions, and listings, of claims in this application:

Listing of Claims:

Claims 1-20. (cancelled).

21. (previously presented): A continuous method for shaping a metallic flat material to give a metallic wave profile, comprising:

- passing through said flat material between two meshing tooth systems of two rotating, toothed rolls, said rolls being provided with a continuously adjustable center distance between each other, and with a continuously adjustable mutual rotation position,
- adjusting said center distance before or during said passing through of said flat material for setting a desired profile height of said wave profile, and
- adjusting a flank clearance between said meshing tooth systems before or during said passing through of said flat material by relative rotation with respect to one another of said rolls for presetting a profile cross-section of said wave profile,
- wherein said flank clearance between said meshing tooth systems is adjusted in such a way, that a clearance between leading tooth flanks of a first tooth system of said two tooth systems and following tooth flanks of a second tooth system of said two tooth systems at least approximately corresponds to a thickness of said flat material.

22. (previously presented): The method of claim 21, wherein said metallic flat material comprises a metal plate, a metal sheet, a metal strip or a combination of these.

23. (previously presented): The method of claim 21, wherein said profile cross-section of said wave profile is symmetrical.

24. (previously presented): The method of claim 21, wherein said profile cross-section of said wave profile is asymmetrical.

25. (previously presented): The method of claim 21, wherein said profile cross-section of said wave profile is sinusoidal.

26. (previously presented): The method of claim 21, wherein said profile cross-section of said wave profile is trapezoidal.

27. (previously presented): The method of claim 21, further comprising:

- providing said tooth systems of said rolls with a trapezoidal cross-section, and
- bringing together said rolls until a shaping gap between said tooth systems of said rolls at least approximately corresponds to a thickness of said flat material, so that said profile cross-section of said wave profile is trapezoidal.

28. (previously presented): The method of claim 27, further comprising;

- increasing said center distance of said rolls having said tooth systems provided with said trapezoidal cross-section, so that said profile cross-section of said wave profile is sinusoidal.

29. (previously presented): The method of claim 21, wherein, for providing said wave profile with an asymmetrical profile cross-section, said flank clearance between said meshing tooth systems is adjusted in such a way, that said tooth systems are displaced with respect to one another when considered in a rotation direction of said rolls, so that individual teeth of said tooth systems are positioned asymmetrically to one another.

30. (cancelled).

31. (previously presented): The method of claim 21, further comprising the step of applying a lubricant to said flat material, to said rolls or to both said flat material and said rolls.

32. (previously presented): The method of claim 31, wherein said lubricant is applied to said flat material prior to said passing through of said flat material between said two meshing tooth systems.

33. (previously presented): The method of claim 32, wherein said lubricant is a lubricating varnish.

34. (previously presented): The method of claim 33, wherein said lubricating varnish is epoxy resin-binder based.

35. (previously presented): The method of claim 32, wherein said lubricant is a lubricating foil.

36. (previously presented): The method of claim 35, further comprising the step of removing said lubricating foil from said flat material following said passing through of said flat material between said two meshing tooth systems.

37. (previously presented): Device for continuous shaping of a metallic flat material to give a metallic wave profile, comprising:

- two rotary, toothed rolls provided with meshing tooth systems, said meshing tooth systems being provided for passing through said flat material to be shaped between,
- means for continuously adjusting a center distance between said rolls for setting a profile height of said wave profile, and
- means for adjusting a flank clearance between said meshing tooth systems by continuously adjusting a mutual rotation position of said rolls for modifying a profile cross-section of said wave profile,
- wherein said flank clearance between said meshing tooth systems is adjusted in such a way, that a clearance between leading tooth flanks of a first tooth system of said two tooth systems and following tooth flanks of a second tooth system of said two tooth systems at least approximately corresponds to a thickness of said flat material.

38. (previously presented): The device of claim 37, wherein said metallic flat material comprises a metal plate, a metal sheet, a metal strip or a combination of these.

39. (previously presented): The device of claim 37, wherein said rotary, toothed rolls are crowned.

40. (previously presented): The device of claim 37, wherein surfaces of said rotary, toothed rolls have a centerline average surface roughness in a range of 0.01 μm to 6.5 μm .

41. (previously presented): The device of claim 40, wherein said surfaces of said rotary, toothed rolls are ground.

42. (previously presented): The device of claim 40, wherein said surfaces of said rotary, toothed rolls are coated.

43. (previously presented): The device of claim 40, wherein said surfaces of said rotary, toothed rolls are polished.

44. (previously presented): The device of claim 40, wherein said surfaces are provided in areas where said rolls come into contact with said flat material.

45. (previously presented): The device of claim 37, wherein

- said tooth systems are provided with teeth each having a crest and tooth flanks, and
- said crests are rounded at transitions leading into said tooth flanks.

46. (previously presented): The device of claim 37, wherein

- said tooth systems are provided with teeth having tooth flanks, and with gullets located between adjacent teeth,
- said gullets are provided with transitions leading into adjacent tooth flanks, and
- said transitions of said gullets are rounded.

47. (previously presented): The device of claim 37, wherein

- said tooth systems are provided with teeth each having a crest, and
- said crests of said teeth are flattened.

48. (previously presented): The device of claim 37, wherein

- said tooth systems are provided with teeth and with gullets located between adjacent teeth, and
- said gullets are flattened.

49. (previously presented): The device of claim 37, wherein

- said tooth systems are provided with teeth each having a crest, with gullets located between said teeth, and with tooth flanks extending between said crests and said gullets, and wherein
- each of said tooth flanks has a zone having a linear cross-section.

50. (previously presented): The device of claim 37, wherein

- said tooth systems are provided with teeth each having a crest, with gullets located between said teeth, and with tooth flanks extending between said crests and said gullets, and wherein
- each of said tooth flanks has a zone having a slightly curved, convex shape.

51. (previously presented): The device of claim 37, wherein

- said rolls are each provided with two ends,
- at each of said ends are provided adjusting means common to both rolls for adjusting said center distance between said rolls, and
- said two adjusting means are adjustable separately from one another.

52. (previously presented): A method for the continuous manufacture of a composite material, comprising:

- shaping, in accordance with the method of claim 21, a wave profile having profile elevations on a metallic flat material to give a wavy flat material,
- applying a second flat material to said profile elevations of said wavy flat material on a first side of said wavy flat material, and
- firmly joining said second flat material to said wavy flat material.

53. (previously presented): The method of claim 52, further comprising:

- applying a third flat material to said profile elevations of said wavy flat material on a second side of said wavy flat material, and
- firmly joining said third flat material to said wavy flat material.

54. (previously presented): The method of claim 52, wherein said metallic flat material comprises a metal plate, a metal sheet, a metal strip or a combination of these.

55. (previously presented): The method of claim 52, wherein said second flat material is continuously applied to said wavy flat material and joined thereto.

56. (previously presented): The method of claim 52, wherein said second flat material is adhered to said wavy flat material.

57. (previously presented): The method of claim 53, wherein said third flat material is continuously applied to said wavy flat material and joined thereto.

58. (previously presented): The method of claim 53, wherein said third flat material is adhered to said wavy flat material.

59. (previously presented): A plant for continuous manufacture of a composite material comprising a wavy flat material and at least one further flat material, the plant comprising:

- the device of claim 37 for the continuous shaping of a metallic flat material to give a wavy flat material having a wave profile,
- at least one supply device for supplying said further flat material to said wavy flat material passing out of said device of claim 37, and
- at least one joining unit for joining said wavy flat material to said further flat material.

60. (previously presented): The plant of claim 59, wherein said wavy flat material comprises a wavy metal plate, a wavy metal sheet, a wavy metal strip or a combination of these.

61. (previously presented): The plant of claim 59, wherein

- said joining unit is provided with means for applying adhesive to profile elevations provided in said wave profile of said wavy flat material, and wherein
- said joining unit is further provided with a pressing device for pressing said further flat material against said wavy flat material provided with said adhesive.

62. (previously presented): The plant of claim 61, wherein said pressing device comprises a pressing roll.

Claims 63-65. (cancelled).

Claims 67-68. (cancelled).